

IN THE CLAIMS:

Claims 1-5 (Canceled).

Claim 6. (Previously Presented) The plasma display panel according to any one of claims 52 to 56, further comprising a light absorption layer provided at each position opposing a non-lighting area between the unit light emitting areas adjacent to each other in the row direction or the column direction of the front substrate, and opposite the back substrate in relation to said ultraviolet region light emissive layer.

Claims 7-12 (Canceled).

Claim 13. (Previously Presented) The plasma display panel according to any one of claims 57 and 58, further comprising:

a partition wall provided between the front substrate and the back substrate for partitioning the discharge space into the unit light emitting areas, and

wherein said secondary electron emissive layer is provided on a side wall-face of the partition wall.

Claim 14. (Previously Presented) The plasma display panel according to any one of claims 57 and 58, further comprising a partition wall disposed between the front substrate and the back substrate for partitioning the discharge space into the unit light emitting areas, and containing the material having a coefficient of secondary electron emission higher than that of the dielectrics forming said protective dielectric layer to be formed in combination with said secondary electron emissive layer.

Claim 15. (Previously Presented) The plasma display panel according to any one of claims 57 and 58, wherein said secondary electron emissive layer is placed between the back substrate and the phosphor layer.

Claims 16-18(Canceled).

Claim 19. (Previously Presented) The plasma display panel according to any one of claims 59 and 60, wherein said phosphor layer contains the ultraviolet region light emitting phosphor to be formed in combination with said ultraviolet region light emissive layer.

Claim 20. (Cancelled).

Claim 21. (Previously Presented) The plasma display panel according to any one of claims 59 and 60, wherein the ultraviolet region light emitting phosphor forming said ultraviolet region light emissive layer or the visible region light emitting phosphor forming said visible region light emissive layer is a light emissive material having persistence characteristics allowing radiation for 0.1 msec or more.

Claims 22-26 (Canceled).

Claim 27. (Previously Presented) The plasma display panel according to any one of claims 59 and 60, wherein a light absorption layer is provided at a position opposing a non-lighting area between the unit light emitting areas adjacent to each other in the row direction or the column direction of the front substrate, and opposite the back substrate in relation to said ultraviolet region light emissive layer or said visible region light emissive layer.

Claims 28-31 (Canceled).

Claim 32. (Previously Presented) The plasma display panel according to claim 67, further comprising an additional portion provided at a portion of the dielectric layer, opposing said transverse wall of said partition wall and said interstice, and protruding toward the transverse wall.

Claim 33. (Previously Presented) The plasma display panel according to claim 32, wherein said communication element is provided in said additional portion.

Claim 34. (Previously Presented) The plasma display panel according to claim 67, wherein said communication element is provided in said transverse wall of said partition wall.

Claim 35. (Previously Presented) The plasma display panel according to claim 67, wherein a light absorption layer is provided at a portion of the dielectric layer opposing said interstice.

Claim 36. (Previously Presented) The plasma display panel according to claim 67, wherein said transverse walls of said partition wall on the front substrate side respectively have higher parts in height than said vertical wall to form a groove between the adjacent higher parts for constructing said communication element.

Claim 37. (Previously Presented) The plasma display panel according to claim 36, wherein said priming particle generating member is disposed on at least a portion in contact with said groove and of said higher part of said transverse wall having a higher height than that of said vertical wall.

Claim 38. (Previously Presented) The plasma display panel according to claim 37, wherein said priming particle generating member is formed of an ultraviolet region light emissive material or a visible region light emissive material having persistence characteristics allowing emission for 0.1 msec or more.

Claim 39. (Previously Presented) The plasma display panel according to claim 38, wherein said priming particle generating member includes a material having a work function smaller than that of dielectrics forming the protective dielectric layer.

Claim 40. (Cancelled)

Claim 41. (Previously Presented) The plasma display panel according to claim 68, further comprising a light absorption layer provided at a portion of the dielectric layer opposing said priming particle generating member.

Claim 42. (Cancelled).

Claim 43. (Cancelled).

Claim 44. (Previously Presented) The plasma display panel according to claim 69, wherein said priming particle generating member includes a material having a work function smaller than that of dielectrics forming the protective dielectric layer.

Claim 45. (Previously Presented) The plasma display panel according to claim 67, wherein said transverse walls of said partition wall on the front substrate side have respectively higher parts in height than said vertical wall, to form a groove between the adjacent higher parts, and said priming particle generating member is disposed in the groove.

Claim 46. (Previously Presented) The plasma display panel according to claim 45, wherein said priming particle generating member is formed of an ultraviolet region light emissive material or a visible region light emissive material having persistence characteristics allowing emission for 0.1 msec or more.

Claim 47. (Previously Presented) The plasma display panel according to claim 46, wherein the discharge space is filled with a discharge gas including a mixed inert gas containing 10% or more of a xenon gas.

Claim 48. (Cancelled)

Claim 49. (Previously Presented) The plasma display panel according to any one of claims 66 to 68, wherein said priming particle generating member includes a material having a work function of 4.2 eV or less.

Claim 50. (Cancelled)

Claim 51. (Previously Presented) The plasma display panel according to claim 69, wherein said priming particle generating member includes a material having a work function of 4.2 eV or less.

Claim 52. (Currently Amended) A plasma display panel including a front substrate and a back substrate on opposite sides of a discharge space, a plurality of row electrode pairs extending in a row direction and arranged in a column direction on the front substrate to form display lines, a protective dielectric layer provided on a face of the front substrate facing the discharge space, a plurality of column electrodes extending in the column direction and arranged in the row direction on the back substrate to form a unit light emitting area in the discharge space at each intersection with the row electrode pair, and a phosphor layer on a face of the back substrate facing the discharge space, said plasma display panel comprising;

a priming particle generating member provided at a site facing each unit light emitting area between the front substrate and the back substrate;

wherein said priming particle generating member is formed separate from said phosphor layer and is made up of an ultraviolet region light emissive layer formed of an ultraviolet region light emitting phosphor having persistence characteristics allowing continuous radiation of ultraviolet light for at least 0.1 msec as a result of excitation by ultraviolet rays having a predetermined wavelength, and

wherein said ultraviolet region light emissive layer extends in the row direction at each site opposing the row electrode pairs, and faces toward the discharge space of the unit light emitting areas adjacent to each other in the column direction.

Claim 53. (Currently Amended) A plasma display panel including a front substrate and a back substrate on opposite sides of a discharge space, a plurality of row electrode pairs extending in a row direction and arranged in a column direction on the front substrate to form display lines, a protective dielectric layer provided on a face of the front substrate facing the discharge space, a plurality of column electrodes extending in the column direction and arranged in the row direction on the back substrate to form a unit light emitting area in the discharge space at each intersection, with the row electrode pair, and a phosphor layer on a face of the back substrate facing the discharge space, said plasma display panel comprising:

a priming particle generating member provided at a site facing each unit light emitting area between the front substrate and the back substrate;

wherein said priming particle generating member is formed separate from said phosphor layer and is made up of an ultraviolet region light emissive layer formed of an ultraviolet region light emitting phosphor having persistence characteristics allowing continuous radiation of ultraviolet light for at least 0.1 msec as a result of excitation by ultraviolet rays having a predetermined wavelength, and

wherein said ultraviolet region light emissive -layer extends in column direction at each site between the unit light emitting areas adjacent to each other in the row direction, and faces toward the discharge space of the unit light emitting areas adjacent to each other in the row direction.

Claim 54. (Currently Amended) A plasma display panel including a front substrate and a back substrate on opposite sides of a discharge space, a plurality of row electrode pairs extending in a row direction and arranged in a column direction on the front substrate to form display lines, a protective dielectric layer provided on a face of the front substrate facing the discharge space, a plurality of column electrodes extending in the column direction and arranged in the row direction on the back substrate to form a unit light emitting area in the discharge space at each intersection with the row electrode pair, and a phosphor layer on a face of the back substrate facing the discharge space, said plasma display panel comprising:

a priming particle generating member provided at a site facing each unit light emitting area between the front substrate and the back substrate, and

a partition wall disposed between the front substrate and the back substrate, and including transverse walls extending in the row direction and vertical walls extending in the column direction to partition the discharge space into the unit light emitting areas wherein said priming particle generating member is formed separate from said phosphor layer and is made up of an ultraviolet region light emissive layer formed of an ultraviolet region light emitting phosphor having persistence characteristics allowing continuous radiation of ultraviolet light for at least 0.1 msec as a result of excitation by ultraviolet rays having a predetermined wavelength, and wherein said ultraviolet region light emissive layer is provided between the front substrate and the transverse wall of the partition wall.

Claim 55. (Currently Amended) A plasma display panel including a front substrate and a back substrate on opposite sides of a discharge space, a plurality of row electrode pairs extending in a row direction and arranged in a column direction on the front substrate to form display lines, a protective dielectric layer provided on a face of the front substrate facing the discharge space, a plurality of column electrodes extending in the column direction and arranged in the row direction on the back substrate to form a unit light emitting area in the discharge space at each intersection with the row electrode pair, and a phosphor layer on a face of the back substrate facing the discharge space, said plasma display panel comprising:

a priming particle generating member provided at a site facing each unit light emitting area between the front substrate and the back substrate, and

a partition wall disposed between the front substrate and the back substrate, and including transverse walls extending in the row direction and vertical walls extending in the column direction to partition the discharge space into the unit light emitting areas;

wherein said priming particle generating member is formed separate from said phosphor layer and is made up of an ultraviolet region light emissive layer formed of an ultraviolet region light emitting phosphor having persistence characteristics allowing continuous radiation of ultraviolet light for at least 0.1 msec as a result of excitation by ultraviolet rays having a predetermined wavelength, and

wherein said ultraviolet region light emissive layer is provided between the front substrate and the vertical wall of the partition wall.

Claim 56. (Currently Amended) A plasma display panel including a front substrate and a back substrate on opposite sides of a discharge space, a plurality of row electrode pairs extending in a row direction and arranged in a column direction on the front substrate to form display lines, a protective dielectric layer provided on a face of the front substrate facing the discharge space, a plurality of column electrodes extending in the column direction and arranged in the row direction on the back substrate to form a unit light emitting area in the discharge space at each intersection with the row electrode pair, and a phosphor layer on a face of the back substrate facing the discharge space, said plasma display panel comprising:

a priming particle generating member provided at a site facing each unit light emitting area between the front substrate and the back substrate, and

a stripe patterned partition wall disposed between the front substrate and the back substrate and extending in the column direction to partition the discharge space into the unit light emitting areas aligned in the column direction

wherein said priming particle generating member is formed separate from said phosphor layer and is made up of an ultraviolet region light emissive layer formed of an ultraviolet region light emitting phosphor having persistence characteristics allowing continuous radiation of ultraviolet light for at least 0.1 msec as a result of excitation by ultraviolet rays having a predetermined wavelength,

wherein a row electrode of each of said row electrode pair includes a main body extending in the row direction and a protruding portion protruding from the main body in the column direction in each unit light emitting area, and

wherein said ultraviolet region light emissive layer extends in the row direction at each position opposing the main bodies of the row electrodes.

Claim 57. (Previously Presented) A plasma display panel including a front substrate and a back substrate on opposite sides of a discharge space, a plurality of row electrode pairs extending in a row direction and arranged in a column direction on the front substrate to form display lines, a protective dielectric layer provided on a face of the front substrate facing the discharge space, a plurality of column electrodes extending in the column direction and arranged in the row direction on the back substrate to form, a unit light emitting area in the discharge space at each intersection with the row electrode pair, and a phosphor layer on a face of the back substrate facing the discharge space, said plasma display panel comprising:

a priming particle generating member provided at a site facing each unit light emitting area between the front substrate and the back substrate;

wherein said priming particle generating member is made up of a secondary electron emissive layer formed of a material having a coefficient of secondary electron emission higher than that of dielectrics forming said protective dielectric layer, and

wherein said phosphor layer contains the material, having a coefficient of secondary electron emission higher than that of the dielectrics forming said protective dielectric layer, to be formed in combination with said secondary electron emissive layer.

Claim 58. (Previously Presented) A plasma display panel including a front substrate and a back substrate on opposite sides of a discharge space, a plurality of row electrode pairs extending in a row direction and arranged in a column direction on the front substrate to form display lines, a protective dielectric layer provided on a face of the front substrate facing the discharge space, a plurality of column electrodes extending in the column direction and arranged in the row direction on the back substrate to form a unit light emitting area in the discharge space at each intersection with the row electrode pair, and a phosphor layer on a face of the back substrate facing the discharge space, said plasma display panel comprising:

a priming particle generating member provided at a site facing each unit light emitting area between the front substrate and the back substrate, and

a dielectric layer overlaying column electrodes between the back substrate and the phosphor layer;

wherein said priming particle generating member is formed separate from said phosphor layer and is made up of a secondary electron emissive layer formed of a material having a coefficient of secondary electron emission higher than that of dielectrics forming said protective dielectric layer, and

wherein said dielectric layer contains the material, having a coefficient of secondary electron emission higher than that of the dielectrics forming said protective dielectric layer, to be formed in combination with said secondary electron emissive layer.

Claim 59. (Previously Presented) A plasma display panel including a. front substrate and a back substrate on opposite sides of a discharge space, a plurality of row electrode pairs extending in a row direction and arranged in a column direction on the front substrate to form display lines, a protective dielectric layer provided on a face of the front substrate facing the discharge space, a plurality of column electrodes extending in the column direction and arranged in the row direction on the back substrate to form a unit light emitting area in the discharge space at each intersection with the row electrode pair, and a phosphor layer on a face of the back substrate facing the discharge space, said plasma display panel comprising:

a priming particle generating member provided at a site facing each unit light emitting area between the front substrate and the back substrate

wherein said priming particle generating member includes a secondary electron emissive layer formed of a material having a high coefficient of secondary electron emission, and, an ultraviolet region light emissive layer formed of an ultraviolet region light emitting phosphor having persistence characteristics allowing continuous radiation of ultraviolet light as a result of excitation by ultraviolet rays having a predetermined wavelength or a visible region light emissive layer formed of a visible region light emitting phosphor having persistence characteristics allowing continuous radiation of visible light as a result of excitation by ultraviolet rays having a predetermined wavelength, and

wherein said ultraviolet region light emissive layer or said visible region light emissive layer contains the material having a high coefficient of secondary electron emission, to be formed in combination with said secondary electron emissive layer.

Claim 60. (Previously Presented) A plasma display panel including a front substrate and a back substrate on opposite sides of a discharge space, a plurality of row electrode pairs extending in a row direction and arranged in a column direction on the front substrate to form display lines, a protective dielectric layer provided on a face of the front substrate facing the discharge space, a plurality of column electrodes extending in the column direction and arranged in the row direction on the back substrate to form a unit light emitting area in the discharge space at each intersection with the row electrode pair, and a phosphor layer on a face of the back substrate facing the discharge space, said plasma display panel comprising:

a priming particle generating member provided at a site facing each unit light emitting area between the front substrate and the back substrate

wherein said priming particle generating member includes a secondary electron emissive layer formed of a material having a high coefficient of secondary electron emission, and, an ultraviolet region light emissive layer formed of an ultraviolet region light emitting phosphor having persistence characteristics allowing continuous radiation of ultraviolet light as a result of excitation by ultraviolet rays having a predetermined wavelength or a visible region light emissive layer formed of a visible region light emitting phosphor having persistence characteristics allowing continuous radiation of visible light as a result of excitation by ultraviolet rays having a predetermined wavelength, and

wherein said phosphor layer contains the ultraviolet region light emitting phosphor and the material having a high coefficient of secondary electron emission, to be formed in combination with said ultraviolet region light emissive layer and said secondary electron emissive layer.

Claims 61-65(Canceled).

Claim 66. (Previously Presented) A plasma display panel including a front substrate, a back substrate, a plurality of row electrode pairs arranged in a column direction and extending in a row direction to form display lines on a back face of the front substrate, a dielectric layer overlaying the row electrode pairs on the back face of the front substrate, a protective dielectric layer overlaying the dielectric layer on the back face of the front substrate, and a plurality of column electrodes arranged in the row direction on a face of the back substrate opposing the front substrate with a discharge space between, and extending in the column direction to form unit light emitting areas in the discharge space at each intersection of the row electrode pairs and the column electrodes, said plasma display panel comprising:

a priming particle generating member provided in contact with the discharge space between the adjacent unit light emitting areas in the column direction or the row direction;

wherein said priming particle generating member is formed of an ultraviolet region light emissive material or a visible region light emissive material having persistence characteristics allowing emission for 0.1 msec or more, and includes a material having a work function smaller than that of dielectrics forming the protective dielectric layer.

Claim 67. (Previously Presented) A plasma display panel including a front substrate, a back substrate, a plurality of row electrode pairs arranged in a column direction and extending in a row direction to form display lines on a back face of the front substrate, a dielectric layer overlaying the row electrode pairs on the back face of the front substrate, a protective dielectric layer overlaying the dielectric layer on the back face of the front substrate, and a plurality of column electrodes arranged in the row direction on a face of the back substrate opposing the front substrate with a discharge space between, and extending in the column direction to form unit light emitting areas in the discharge space at each intersection of the row electrode pairs and the column electrodes, said plasma display panel comprising:

a priming particle generating member provided in contact with the discharge space between the adjacent unit light emitting areas in the column direction or the row direction;

a partition wall disposed between the front substrate and the back substrate and including vertical walls extending in the column direction and transverse walls extending in the row direction to define the discharge space into the unit light emitting areas in the row direction and in the column direction, said transverse wall between the unit light emitting areas to each other in the column direction being divided,

an interstice extending in parallel to the row direction and provided between the divided transverse walls to space the divided transverse walls from each other, and

a communication element provided for communication between the interior of said interstice and the interior of the discharge spaces of the unit light emitting areas adjacent to said interstice in the column direction wherein said priming particle generating member is placed in said interstice.

Claim 68. (Previously Presented) A plasma display panel including a front substrate, a back substrate, a plurality of row electrode pairs arranged in a column direction and extending in a row direction to form display lines on a back face of the front substrate, a dielectric layer overlaying the row electrode pairs on the back face of the front substrate, a protective dielectric layer overlaying the dielectric layer on the back face of the front substrate, and a plurality of column electrodes arranged in the row direction on a face of the back substrate opposing the front substrate with a discharge space between, and extending in the column direction to form unit light emitting areas in the discharge space at each intersection of the row electrode pairs and the column electrodes, said plasma display panel comprising:

a priming particle generating member provided in contact with the discharge space between the adjacent unit light emitting areas in the column direction or the row direction;

an additional portion provided at a portion of the dielectric layer opposing the border between the unit light emitting areas adjacent to each other in the column direction, and jutting toward the interior of the discharge space;

a partition wall disposed between the front substrate and the back substrate and including vertical walls extending in the column direction and transverse walls extending in the row direction to define the discharge space into the unit light emitting areas in the row direction and in the column direction, said transverse walls being between the unit light emitting areas and being divided in the column direction, and

an interstice extending in parallel to the row direction and provided between the divided transverse walls to space the divided transverse walls from each other;

wherein said priming particle generating member is formed separate from said phosphor layer and is disposed on a portion of said additional portion facing the discharge space, and

wherein a light absorption layer is provided at a portion of the dielectric layer opposing said interstice.

Claim 69. (Previously Presented) A plasma display panel including a front substrate, a back substrate, a plurality of row electrode pairs arranged in a column direction and extending in a row direction to form display lines on a back face of the front substrate, a dielectric layer overlaying the row electrode pairs on the back face of the front substrate, a protective dielectric layer overlaying the dielectric layer on the back face of the front substrate, and a plurality of column electrodes arranged in the row direction on a face of the back substrate opposing the front substrate with a discharge space between, and extending in the column direction to form unit light emitting areas in the discharge space at each intersection of the row electrode pairs and the column electrodes, said plasma display panel comprising:

a priming particle generating member provided in contact with the discharge space between the adjacent unit light emitting areas in the column direction or the row direction, and

a partition wall disposed between the front substrate and the back substrate, and defining the border between the unit light emitting areas adjacent to each other at least in the row direction;

wherein said priming particle generating member is formed separate from said phosphor layer and is placed on a front face of the partition wall opposing the front substrate and faces the discharge space, and is formed of an ultraviolet region light emissive material or a visible region light emissive material having persistence characteristics allowing emission for 0.1 msec or more.

Claim 70. (Previously Presented) A plasma display panel including a front substrate, a back substrate, a plurality of row electrode pairs arranged in a column direction and extending in a row direction to form display lines on a back face of the front substrate, a dielectric layer overlaying the row electrode pairs on the back face of the front substrate, a protective dielectric layer overlaying the dielectric layer on the back face of the front substrate, and a plurality of column electrodes arranged in the row direction on a face of the back substrate opposing the front substrate with a discharge space between, and extending in the column direction to form unit light emitting areas in the discharge space at each intersection of the row electrode pairs and the column electrodes, said plasma display panel comprising:

a priming particle generating member provided in contact with the discharge space between the adjacent unit light emitting areas in the column direction or the row direction;

wherein said priming particle generating member is formed separate from said phosphor layer and is formed of an ultraviolet region light emissive material or a visible region light emissive material having persistence characteristics allowing emission for 0.1 msec or more, and

wherein the discharge space is filled with a discharge gas including a mixed inert gas containing 10% or more of a xenon gas.

Claim 71. (Previously Presented) A plasma display panel including a front substrate, a back substrate, a plurality of row electrode pairs arranged in a column direction and extending in a row direction to form display lines on a back face of the front substrate, a dielectric layer overlaying the row electrode pairs on the back face of the front substrate, a protective dielectric layer overlaying the dielectric layer on the back face of the front substrate, and a plurality of column electrodes arranged in the row direction on a face of the back substrate opposing the front substrate with a discharge space between, and extending in the column direction to form unit light emitting areas in the discharge space at each intersection of the row electrode pairs and the column electrodes, said plasma display panel comprising:

a priming particle generating member provided in contact with the discharge space between the adjacent unit light emitting areas in the column direction or the row direction;

wherein said priming particle generating member is formed of an ultraviolet region light emissive material or a visible region light emissive material having persistence characteristics allowing emission for 0.1 msec or more, and includes a material having a work function of 4.2 eV or less.